

CLAIMS

1. Rotating regulating device for the rotation and/or linear displacement of an actuating element of a valve, throttle, blowout preventer or similar, in particular in the field of gas or oil production, with a spindle drive and a drive train rotationally driving the spindle drive, the said drive train exhibiting at least one reduction gear unit and a drive device connected to it for movement, characterized in that the rotating spindle or nut of the spindle drive exhibits at least one engaging element, essentially protruding radially outwards, which engages guide slots, whereby a first guide slot is fixed relative to a device housing and a second guide slot can be rotated relative to the device housing and/or is supported for displacement in the longitudinal direction of the rotating spindle, whereby the guide slots exhibit at least different slopes in the longitudinal direction of the rotating spindle and the movable guide slot is connected for movement to the actuating element.
2. Rotating regulating device according to claim 1, characterized in that the guide slots are formed in a first fixed collar which is fixed in the device housing, and a rotating collar which is at least supported for rotation relative to the said fixed collar.
3. Rotating regulating device according to claim 1, characterized in that the first and second guide slots are formed in opposing pairs relative to the rotating spindle.
4. Rotating regulating device according to claim 1, characterized in that the rotating spindle is supported so that it can be rotated, but is axially immovable, and the nut can be displaced along the rotating spindle and can be rotated relative to it.
5. Rotating regulating device according to claim 1, characterized in that the rotating spindle and nut form a ball spindle drive.
6. Rotating regulating device according to claim 1, characterized in that two engaging elements, protruding radially outwards, are fastened to the nut, in particular releasably.
7. Rotating regulating device according to claim 1, characterized in that the engaging elements are arranged spaced to one another in the circumferential direction of the nut, in particular by

180°.

8. Rotating regulating device according to claim 1, characterized in that the fixed collar is fixed releasably to an inner wall of the device housing.
9. Rotating regulating device according to claim 1, characterized in that at least two mounting bolts are fitted from the direction of the device housing into the fixed collar from a radial direction.
10. Rotating regulating device according to claim 1, characterized in that the rotating collar can be rotated at its ends, but is supported so that it is axially immovable.
11. Rotating regulating device according to claim 1, characterized in that the rotating collar is rotationally rigidly connected at its end facing the actuating element to the said actuating element.
12. Rotating regulating device according to claim 1, characterized in that the rotating collar exhibits a ring-flange on its front end, protruding radially inwards, on which the rotating spindle, in particular on a first end, is supported rotationally.
13. Rotating regulating device according to claim 1, characterized in that the rotating spindle is connected for movement by its second end to the reduction gear unit.
14. Rotating regulating device according to claim 1, characterized in that the reduction gear unit is formed as a so-called harmonic drive.
15. Rotating regulating device according to claim 1, characterized in that the flexible, cup-shaped sleeve of the harmonic drive is connected, in particular releasably, to the second end of the rotating spindle.
16. Rotating regulating device according to claim 1, characterized in that the wave generator of the harmonic drive is connected, in particular releasably, to a driven shaft of the drive train.

17. Rotating regulating device according to claim 1, characterized in that the driven shaft is composed of different shaft segments, arranged one behind the other.
18. Rotating regulating device according to claim 1, characterized in that a shaft segment is a spurwheel formed with an outer tooth arrangement.
19. Rotating regulating device according to claim 1, characterized in that the spurwheel is a worm wheel engaging at least one worm via the outer tooth arrangement.
20. Rotating regulating device according to claim 1, characterized in that the spurwheel is a helically toothed spurwheel engaging at least one helically toothed chive wheel via the outer tooth arrangement.
21. Rotating regulating device according to claim 1, characterized in that the shaft segment adjacent to the spurwheel is supported rotationally inside the device housing using pivot bearings.
22. Rotating regulating device according to claim 1, characterized in that a position sensor is assigned to the shaft segment terminating the driven shaft.
23. Rotating regulating device according to claim 1, characterized in that the worm is essentially arranged centrally on a drive shaft which is arranged perpendicular to the driven shaft.
24. Rotating regulating device according to claim 1, characterized in that at least one motor, in particular an electric motor, is assigned to both ends of the drive shaft.
25. Rotating regulating device according to claim 1, characterized in that drive shafts are arranged in pairs opposite relative to the driven shaft.
26. Rotating regulating device according to claim 1, characterized in that the drive shaft is at least supported floating at one end.
27. Rotating regulating device according to claim 1, characterized in that the drive shafts are mechanically synchronized in their rotational movements using a mechanical coupling device

with toothed belt, chain or similar.

28. Rotating regulating device according to claim 1, characterized in that the drive shafts are electronically synchronized in their rotational movement using the motors.

29. Rotating regulating device according to claim 1, characterized in that for a double helical gear consisting of a helically toothed drive wheel and a helically toothed spurwheel, the drive shafts are arranged parallel to the driven shaft.

30. Rotating regulating device according to claim 1, characterized in that with a double helical gear at least two motors are assigned to an end of the drive shaft.

31. Rotating regulating device according to claim 1, characterized in that a reduction gear unit, in particular a harmonic drive, is arranged between the motor and a helically toothed drive wheel.

32. Rotating regulating device according to claim 1, characterized in that the drive shaft is connected for movement to the flexible, cup-shaped sleeve of the harmonic drive and the helically toothed drive wheel is connected for movement to the wave generator.